THE PRACTICAL USE OF THE METHOD OF THE HIERARCHY ANALYSIS IN THE LOGISTIC PROCESS OF CHOOSING THE SUPPLIER OF MATERIAL RESOURCES

© 2009 L.A. Sosunova, Zh.A. Markova*

The article considers the essence of the method of hierarchy analysis and the possibility of its practical application in the process of choosing the supplier. The method of hierarchy analysis is targeted at improving the process of choosing the supplier with the help of the tools of purchasing logistics.

Formation and development of logistic purchase system in construction is based on establishing the long-term and rational links with the suppliers of material resources. In relation to this the first instrument of achieving the favorable result for construction enterprise is the efficient choice of key suppliers.

The use of the method of hierarchy analysis in the process of choosing the suppliers makes it possible to find out if one supplier or factor is better or more important in a certain situation.

The foundational factors of choosing the supplier are the suggested price level, quality, form and payment deadlines, the presence of the centralized supply, as well as production capacity and safety of the supplier.

While comparing the criteria we talk about their importance, and while comparing the alternatives we talk about their preference. The choice of optimal suppliers for making the contract on the basis of numerical scale needs to make the preliminary importance range, in other words to compare two factors according to a certain scale of preferences (see table).

The next step of analysis is the factorial description of each supplier.

Evaluation of production quality is done in accordance with the correspondence of products to national and world standards, the presence of international certificates of quality, recommendations and the quantity of consumers' reclamations. The presence of centralized supply (including the supply costs in the price of the purchased material) is also among the advantages of some suppliers, the only problem is in giving grounds for these costs.

Industrial capacity of supplier makes it possible to satisfy the demand in materials on a certain request.

Reliability is defined by companies reputation on the market. The characteristics "reliability of supplies" fully includes "7-R" logistic rules. It is the integral evaluation of the ability of the enterprise to provide the stable continuous industrial process. The reliability of supplies includes the degree of readiness for supplies, the level of supplies flexibility in the process of loading and transportation.

The dominating factors are evaluated by the correlation with each other. If factor i while comparing with j gets one of the above mentioned values, factor j in comparison to i gets a reciprocal value (1/value).

The scale of relative importance

Estimation	Definition	Interpretation
0	The factors cannot be compared	There is no sense in comparing these two factors
1	The factors are of equal importance	The factors make similar input in achieving the goal
3	Imperceptible preference	Experience and judgment give grounds to prefer one factor to the other , but they cannot be treated as uncontroverted
5	Essential preference	Experience and judgment give essential preference to one factor
7	Evident preference	There are irrefutable grounds for preferring one factor to another
9	Absolute preference	When the evidence in favour of preferring one factor to another is highly convincing
2, 4, 6, 8	Intermediate values between the neighbour scale values	The situation when it is difficult to make a choice between two neighbour odd numbers, and compromise is necessary.

* Liliana A. Sosunova, Doctor of Economics, Professor of Samara State University of Economics; Zhanna A. Markova, post-graduate student of Samara State University of Economics. E-mail: zhanmax@mail.ru.

After the pair evaluation of factors the product of the values of their evaluation on lines is calculated, afterwards the root is extracted. The weightage of the factor is determined by dividing the value, extracted from the root, on the sum of these values on all the factors. As a result the sum of factor weightage of all the factors should be equal to 1.

The suppliers are compared according to the incoming information used as a condition of their participation in the choice of supplier.

Logistic process of the choice of supplier with the help of this method makes it possible to reconsider the importance of the factors in each case, changing by this the final rating of suppliers. The main advantages of this model is the possibility of its deep evaluation and checking its accuracy.

Andreychikov A. V. Analysis, synthesis, decision planning in economy. M., 2000.

Telichenko V.I., Lapdus A.A., Morosenko A.A. Information modeling of technologies and business processes in construction. M., 2008.